

**Developments in NextGen**  
**3<sup>rd</sup> ENRI International Workshop on ATM/CNS**  
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# What is NextGen?

- NextGen represents the transformation of our national airspace system, making it flexible and sustainable.
- It is not a single program or procedure, but is a comprehensive initiative that integrates new and existing technologies, procedures and policies.
- Given the size and complexity of the aviation system, change is necessary to avoid gridlock.



# NextGen: *Delivering safety, sustainability, flexibility and economic viability*

## Today's National Airspace System

Ground-based Navigation and Surveillance

Air Traffic Control Communications By Voice

Disconnected Information Systems

Cognitive-Based Air Traffic "Control"

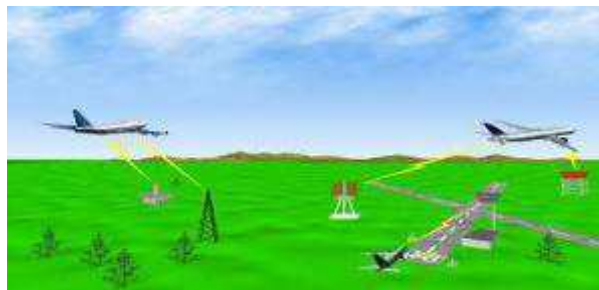
Fragmented Weather Forecasting

Airport Operations Limited By Visibility Conditions

Forensic Safety Systems

Focus on major airports

Inefficient routes & fuel consumption



## NextGen

Satellite-based Navigation and Surveillance

Routine Information Sent Digitally

Information More Readily Accessible

Automation, Decision Support Tools

Forecasts Embedded into Decisions

Operations Continue Into Lower Visibility Conditions

Prognostic Safety Systems

Focus on metropolitan areas

Shorter flight paths/ fuel saving procedures; alternative fuels; reduced noise



**NextGen is...**

## **Flexible & Sustainable**

**Reduces delays & congestion**

**Creates more efficient routes**

**Bypasses bad weather**

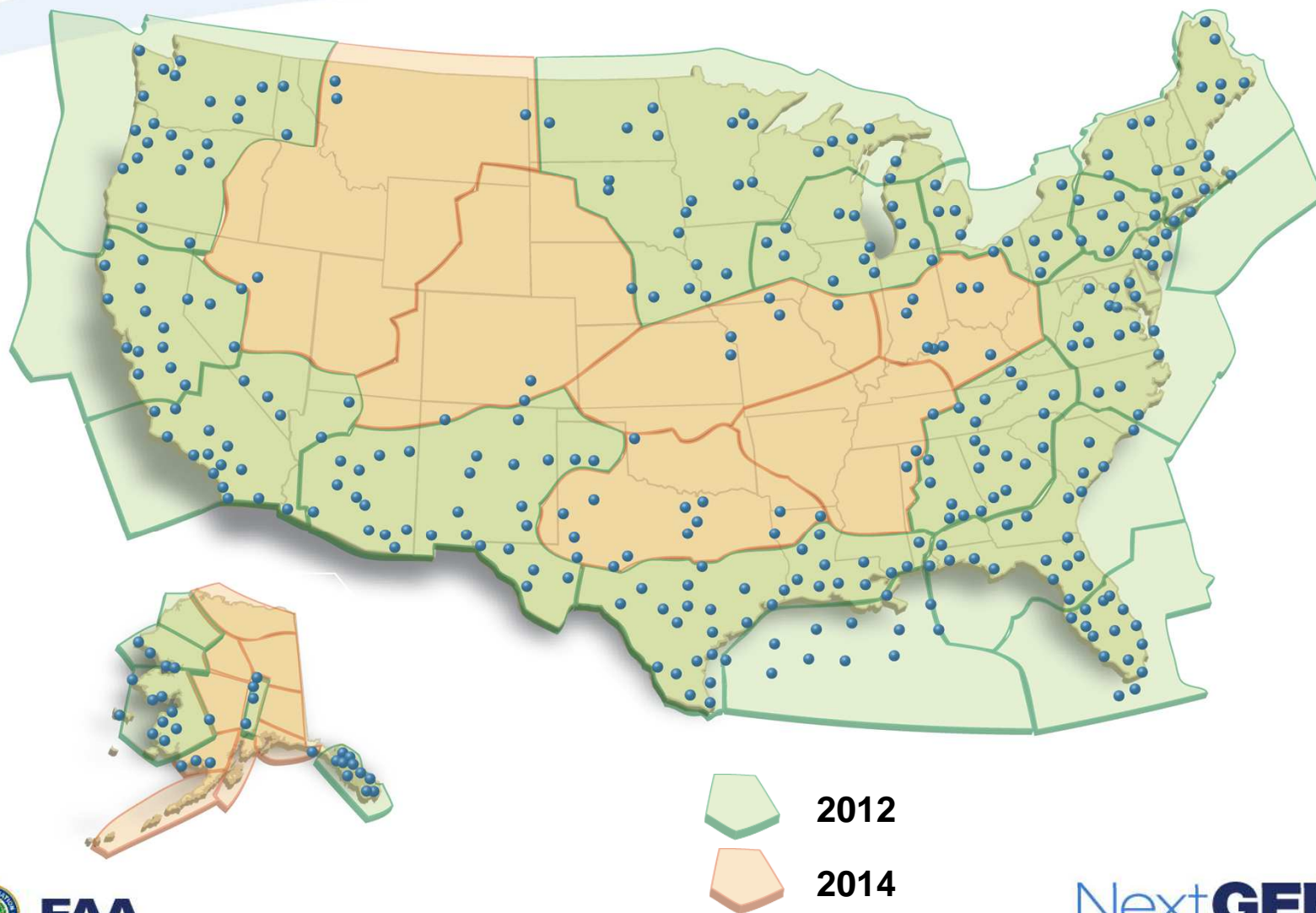
**Provides precise guidance & tracking**

**Saves fuel**

**Reduces pollution & noise**



# Expansion of ADS-B



**FAA**

**NextGEN**

# Increased Benefits of Performance Based Navigation



— Q-Route    — T-Route    ● SID    ● STAR    ● RNP    ● OPD



# Better Airport Arrivals: Optimized Profile Descents (OPDs)

- The traditional way of descending requires leveling off at each stage
- OPDs allow more precise and efficient descents at reduced engine power, thus saving fuel and reducing noise.
- Fuel reduction reduces emissions.
- At Phoenix Sky Harbor International Airport, the FAA has implemented four OPDs in the last year.
- Total cost savings in Phoenix test: estimated at \$6.4 million per year.



# Recent Successes: Greener Skies Over Seattle

- Collaboration between the FAA, airlines, the Port of Seattle, and Boeing Corporation
- Fewer emissions in the skies over Seattle
- Shorter routes using PBN arrival procedures
- Time and fuel savings
- 





# LPV: Better Access to Small & GA Airports



**FAA**

Next**GEN**

# Surface Data Sharing: More Efficient Ground Operations



# Upcoming Items

- Mini – Global Demonstration in 2014
- Support of the GANP and block upgrades at the ICAO Assembly.
- Continued work toward harmonization with other regions
  - ✦ Work with SESAR, CARATS, and others



# White House & Congress: NextGen is Priority

- The NextGen budget remains about \$1 billion per year
- The White House and the Department of Transportation are fully committed to NextGen



# www.faa.gov/nextgen



The screenshot shows the FAA NextGen website. At the top is a navigation menu with links for Aircraft, Airports, Air Traffic, Data & Research, Licenses & Certificates, Regulations & Policies, and Training & Testing. Below the menu is the "NextGEN" logo and a "Subscribe" button. The main content area features a large graphic comparing a "NextGen Arrival Path" (a curved path) with a "Conventional Landing Path" (a straight path). Below this is a "NextGen Experience" section with a video player titled "NextGen Satellite Navigation Approaches". The video player has a play button and a "NextGEN" logo. To the right of the video player is a "NextGen Dashboard Lands On Time" section with text about enhancing infrastructure and a "Learn more" link.